

18.

Report of the Hospital and Laboratory of the New York Zoological Park, 1939. Mortality Statistics of the Society's Collection.

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During the year 1939 autopsies were performed in the Hospital and Laboratory of the New York Zoological Park on 135 reptiles, 221 birds and 109 mammals which died in the Society's collection.

These figures do not represent the total number of deaths in the collection; they are merely the totals of specimens in each group which were subjected to post-mortem examination. Certain of the rarer mammals and birds, in particular, were deposited with the Department of Comparative Anatomy of the American Museum of Natural History without autopsy. Out of the 800 reptiles which died during the year, only a comparatively small number were examined. In the great majority of cases autolysis was advanced before the specimens reached the Laboratory.

As in the report of the Hospital and Laboratory for 1938, the titles of the International Classification of Causes of Death (human) have been employed, with such modification as was necessary to adapt them to the pathology of animals. Until a standard and generally accepted classification of the diseases of animals is compiled, a modification of the human disease list can bring at least a measure of uniformity into the reporting of animal mortality.

Joint or contributory causes of death have been ignored in the statistical summaries that follow, for the sake of brevity and clarity, and only the chief pathological changes found at autopsy have been reported. More detailed information is, of course, available on the autopsy records of the Hospital and Laboratory. These contain a description of both gross and microscopic tissue changes as well as the bacteriology and parasitology encountered at autopsy.

Grouping of specimens by age has been dropped except in the case of mammals where it was practicable to make distinctions between immature, adult and post-adult individuals. All birds and reptiles which came to autopsy were adult.

It should be stressed, in connection with Table V, that the specimens considered as "in the collection" during 1939 were, in some instances, of very brief tenure, and in many cases were never placed on exhibition. In some zoological collections it is the practice not to consider as "in the collection," for purposes of mortality statistics, specimens which failed to survive a minimum period which may range from thirty days to six months. The longer the probationary period, the lower the mortality percentage for the entire collection is likely to be. Table V includes some animals which arrived at the Zoological Park in a moribund state and failed to survive even their first day "in the collection."

TABLE I.

REPTILES.			Specimens.	Total specimens autopsied.	Percentage of 135 reptiles autopsied.
INFECTIOUS & PARASITIC DISEASES.....				10	7.40
Acid-fast Infection				5	3.70
<i>Iguana i. rhinolopha</i> —Central American Iguana	3				
<i>Python m. molurus</i> —Black-tailed Python	1				
<i>Agkistrodon piscivorus</i> —Moccasin	1				
Intestinal Cestodes				3	2.22
<i>Farancia a. abacura</i> —Red-bellied Snake.....	1				
<i>Ptyas mucosus</i> —Indian Rat Snake	1				
<i>Agkistrodon blomhoffi</i> —Blomhoff's Pit Viper.....	1				
Intestinal Helminths				2	1.48
<i>Eunectes murinus</i> —Anaconda	1				
<i>Trimeresurus flavomaculatus</i> —Indian Green Tree Viper	1				
NUTRITIONAL DISEASES				4	2.96
Cachexia				4	2.96
<i>Iguana i. rhinolopha</i> —Central American Iguana.....	2				
<i>Farancia a. abacura</i> —Red-bellied Snake.....	1				
<i>Vipera russelii</i> —Russell's Viper.....	1				
DISEASES OF CIRCULATORY SYSTEM.....				3	2.22
Endocarditis with Ruptured Myocardium				1	.74
<i>Lampropeltis getulus floridana</i> —Florida King Snake..	1				
Pericarditis				1	.74
<i>Python m. molurus</i> —Black-tailed Python.....	1				
Filariasis with Ruptured Myocardium				1	.74
<i>Lampropeltis getulus</i> subsp.—Texas King Snake.....	1				
DISEASES OF RESPIRATORY SYSTEM.....				34	25.18
Pneumonia				34	25.18
<i>Zonurus giganteus</i> —Spike-tailed Lizard.....	1				
<i>Constrictor c. constrictor</i> —South American Boa.....	2				
<i>Python curtus</i> —Blood Python.....	1				
<i>Python reticulatus</i> —Regal Python.....	1				
<i>Arizona e. elegans</i> —Smooth-scaled Gopher Snake.....	1				
<i>Boiga dendrophila</i> —Malay Mangrove Snake.....	2				
<i>Drymarchon corais couperi</i> —Texas Gopher Snake.....	1				
<i>Elaphe q. quadrivittata</i> —Chicken Snake.....	2				
<i>Pituophis s. sayi</i> —Prairie Bull Snake.....	1				
<i>Ptyas mucosus</i> —Indian Rat Snake.....	1				
<i>Dendroaspis angusticeps</i> —Black Mamba.....	1				
<i>Dendroaspis viridis</i> —Green Mamba.....	1				
<i>Naja naja</i> —Indian Cobra.....	2				
<i>Naja nivea</i> —Yellow Cobra.....	1				
<i>Trimeresurus flavomaculatus</i> —Indian Green Tree Viper	1				
<i>Cerastes cerastes</i> —Desert Asp.....	1				
<i>Agkistrodon mokasen cupreus</i> —Copperhead.....	1				
<i>Agkistrodon piscivorus</i> —Moccasin	5				
<i>Crotalus a. atrox</i> —Texas Diamond Rattlesnake.....	5				
<i>Crotalus v. viridis</i> —Prairie Rattlesnake.....	1				
<i>Crotalus horridus atricaudatus</i> —Canebrake Rattlesnake	1				
<i>Crotalus h. horridus</i> —Banded Rattlesnake.....	1				
DISEASES OF DIGESTIVE SYSTEM.....				63	46.66
Hepatitis				3	2.22
<i>Iguana i. rhinolopha</i> —Central American Iguana.....	1				
<i>Python reticulatus</i> —Regal Python.....	1				
<i>Dendroaspis viridis</i> —Green Mamba.....	1				

TABLE I. (Continued)

REPTILES.			
	Specimens.	Total specimens autopsied.	Percentage of 185 reptiles autopsied.
Neerotic Stomatitis		6	4.44
<i>Heloderma horridum</i> —Mexican Beaded Lizard.....	1		
<i>Boa canina</i> —Green Tree Boa.....	1		
<i>Python curtus</i> —Blood Python.....	1		
<i>Python regius</i> —Ball Python.....	1		
<i>Naja naja</i> —Indian Cobra.....	1		
<i>Vipera russelii</i> —Russell's Viper.....	1		
Enteritis		13	9.62
<i>Varanus</i> sp.—Monitor Lizard.....	1		
<i>Elaphe g. quadrivittata</i> —Chicken Snake.....	1		
<i>Lampropeltis getulus splendida</i> —Mexican King Snake..	1		
<i>Pituophis m. melanoleucus</i> —Pine Snake.....	1		
<i>Pituophis s. sayi</i> —Prairie Bull Snake.....	1		
<i>Cerastes cerastes</i> —Desert Asp.....	1		
<i>Agkistrodon mokasen cupreus</i> —Copperhead.....	1		
<i>Crotalus a. atrox</i> —Texas Diamond Rattlesnake.....	4		
<i>Crotalus h. horridus</i> —Banded Rattlesnake.....	2		
Neerotic Enteritis		41	30.37
<i>Ctenosaura acanthura</i> —Black Iguana.....	1		
<i>Heloderma suspectum</i> —Gila Monster.....	1		
<i>Tupinambis teguixin</i> —Tegu Lizard.....	1		
<i>Boa canina</i> —Green Tree Boa.....	9		
<i>Constrictor c. constrictor</i> —South American Boa.....	3		
<i>Epicrates cenchris</i> —Ringed Boa.....	2		
<i>Eunectes murinus</i> —Anaconda	1		
<i>Python curtus</i> —Blood Python.....	1		
<i>Python m. molurus</i> —Black-tailed Python.....	3		
<i>Python regius</i> —Ball Python.....	1		
<i>Python reticulatus</i> —Regal Python.....	1		
<i>Boiga dendrophila</i> —Malay Mangrove Snake.....	1		
<i>Drymarchon corais couperi</i> —Texas Gopher Snake.....	1		
<i>Lampropeltis g. getulus</i> —Common King Snake.....	1		
<i>Dendroaspis viridis</i> —Green Mamba.....	1		
<i>Naja hannah</i> —King Cobra.....	1		
<i>Naja naja</i> —Indian Cobra.....	1		
<i>Bitis gabonica</i> —Gaboos Viper.....	1		
<i>Vipera russelii</i> —Russell's Viper.....	1		
<i>Agkistrodon piscivorus</i> —Moccasin.....	1		
<i>Crotalus a. atrox</i> —Texas Diamond Rattlesnake.....	5		
<i>Crotalus cerastes</i> —Horned Rattlesnake.....	1		
<i>Crotalus h. horridus</i> —Banded Rattlesnake.....	2		
DISEASES OF SKIN & CELLULAR TISSUE		5	3.70
Abscess		2	1.48
<i>Drymarchon c. corais</i> —Cribro Rat Snake.....	1		
<i>Agkistrodon piscivorus</i> —Moccasin	1		
Dermatitis		3	2.22
<i>Python regius</i> —Ball Python.....	2		
<i>Agkistrodon piscivorus</i> —Moccasin	1		
UNDETERMINED DIAGNOSIS		16	11.85

TABLE II.

BIRDS.			Specimens.	Total specimens autopsied.	Percentage of 135 reptiles autopsied.
INFECTIOUS & PARASITIC DISEASES.....				24	10.85
Salmonella Infection				2	.90
	<i>Coliuspasser a. albonotatus</i> —White-shouldered Whydah	1			
	<i>Tangara arthus</i> —Yellow-throated Calliste.....	1			
Tuberculosis				10	4.52
	<i>Anas crecca carolinensis</i> —American Green-winged Teal	1			
	<i>Meleagris gallopavo silvestris</i> —Eastern Turkey.....	1			
	<i>Porphyrio poliocephalus poliocephalus</i> — Gray-headed Gallinule	1			
	<i>Streptopelia d. decaocto</i> —Barbary Turtle Dove.....	6			
	<i>Melozona leucotis</i> —White-eared Ground Sparrow.....	1			
Aspergillosis				3	1.35
	<i>Guttera e. edouardi</i> —Black-breasted Crested Guinea-fowl	1			
	<i>Amazona ventralis</i> —Santo Domingo Amazon.....	1			
	<i>Chlorophonia f. frontalis</i> —Yellow-fronted Green Tanager	1			
Liver Flukes				2	.90
	<i>Ardea goliath</i> —Goliath Heron.....	1			
	<i>Florida caerulea</i> —Little Blue Heron.....	1			
Coccidiosis				2	.90
	<i>Astrapia s. stephaniae</i> —Princess Stephanie's Bird of Paradise	1			
	<i>Tangara heinei</i> —Black-capped Calliste.....	1			
Intestinal Obstruction—Nematodes				1	.45
	<i>Columba livia</i> —Swallow Pigeon.....	1			
Taeniasis				4	1.80
	<i>Ostinops viridis</i> —Great Green Cacique.....	1			
	<i>Tangara cyaneicollis hannahiae</i> —Blue-throated Calliste	1			
	<i>Tangara heinei</i> —Black-capped Calliste.....	1			
	<i>Turdus m. merula</i> —European Blackbird.....	1			
NUTRITIONAL DISEASES				2	.90
Slipped Tendon Disease (Manganese Deficiency)				1	.45
	<i>Casmerodius albus egretta</i> —American Egret.....	1			
Malnutrition				1	.45
	<i>Tyto alba pratincola</i> —American Barn Owl.....	1			
DISEASES OF CIRCULATORY SYSTEM.....				6	2.71
Atheromatosis				6	2.71
	<i>Amazona ochrocephala oratrix</i> —Yellow-headed Amazon	1			
	<i>Bubo v. virginianus</i> —Horned Owl.....	1			
	<i>Anthracoceros m. malabaricus</i> —Indian Pied Hornbill..	1			
	<i>Bycanistes cristatus</i> —Silver-cheeked Hornbill.....	1			
	<i>Rhyticeros subruficollis</i> —Blyth's Wreath-billed Hornbill	1			
	<i>Ramphastos piscivorus brevicarinatus</i> — Short-billed Toucan	1			
DISEASES OF RESPIRATORY SYSTEM.....				23	10.40
Ulcerative Laryngitis				6	2.71
	<i>Ajaia ajaja</i> —Roseate Spoonbill.....	1			
	<i>Sagittarius serpentarius</i> —Secretary Bird.....	1			
	<i>Pucrasia m. maculophya</i> —Common Koklass Pheasant...	1			
	<i>Amazona b. barbadensis</i> —Yellow-shouldered Amazon..	1			
	<i>Amazona ochrocephala panamensis</i> —Panama Amazon..	1			
	<i>Brachypternus benghalensis benghalensis</i> — Northern Golden-backed Woodpecker	1			

TABLE II. (Continued)

BIRDS.			Specimens.	Total specimens autopsied.	Percentage of 135 reptiles autopsied.
Tracheitis				1	.45
<i>Belonopterus chilensis lamprenotus</i> —Argentine Lapwing			1		
Pulmonary Congestion				1	.45
<i>Agelaius ruficapillus frontalis</i> —Chestnut-fronted Blackbird			1		
Pneumonia				15	6.78
<i>Tragopan caboti</i> —Cabot Tragopan.....			1		
<i>Ptilinopus jambu</i> —Jambu Fruit Pigeon.....			1		
<i>Crinifer piscator</i> —Brown-headed Touraco.....			1		
<i>Agapornis</i> sp.—Masked Love Bird.....			1		
<i>Anodorhynchus leari</i> —Lear's Macaw.....			1		
<i>Brotogeris j. jugularis</i> —Tovi Parrakeet.....			1		
<i>Tyto alba pratincola</i> —American Barn Owl.....			1		
<i>Anthracothonax v. violicauda</i> — Black-throated Mango Hummingbird			1		
<i>Chlorostilbon caribaeus caribaeus</i> —Caribbean Emerald Hummingbird			1		
<i>Pharomachrus m. mocinno</i> —Quetzal.....			1		
<i>Amblyrhampus holosericeus</i> —Orange-headed Blackbird			1		
<i>Carpodacus mexicanus frontalis</i> —Western House Finch			1		
<i>Tangara m. mexicana</i> —Yellow-bellied Calliste.....			1		
<i>Parotia l. lawesi</i> —Lawes' Six-plumed Bird of Paradise.			1		
<i>Uraeginthus b. bengalus</i> —Cordon Bleu.....			1		
DISEASES OF DIGESTIVE SYSTEM				31	14.02
Impacted Crop				1	.45
<i>Gallus g. gallus</i> —Red Jungle Fowl.....			1		
Gizzard Impaction				4	1.80
<i>Plectropterus gambensis niger</i> — Black Spur-winged Goose			1		
<i>Buteo jamaicensis borealis</i> —Eastern Red-tailed Hawk..			1		
<i>Circus cyaneus hudsonius</i> —Marsh Hawk.....			1		
<i>Urobrachya a. axillaris</i> —Orange-shouldered Whydah..			1		
Enteritis				13	5.88
<i>Casmerodius albus egretta</i> —American Egret.....			1		
<i>Ciconia c. ciconia</i> —European White Stork.....			1		
<i>Cygnus olor</i> —Mute (White) Swan.....			1		
<i>Crossoptilon mantchuricum</i> —Brown Eared Pheasant...			1		
<i>Amazona f. festiva</i> —Festive Amazon.....			1		
<i>Psittacus e. erithacus</i> —Gray Parrot.....			1		
<i>Larus argentatus smithsonianus</i> —Herring Gull.....			1		
<i>Chlorophonia f. frontalis</i> —Yellow-fronted Green Tanager			1		
<i>Paradisaea guthelmi</i> —Emperor of Germany's Bird of Paradise			1		
<i>Tangara cyanoptera</i> —Blue-winged Calliste.....			1		
<i>Tangara flava cayana</i> —Black-faced Calliste.....			1		
<i>Tangara larvata centralis</i> —Mrs. Wilson's Calliste....			1		
<i>Tanagra v. violacea</i> —Violet Euphonia.....			1		
Cirrhosis of Liver				1	.45
<i>Lophura rufa</i> —Malayan Crested Fireback Pheasant....			1		
Hepatitis				11	4.97
<i>Rhynochetos jubatus</i> —Kagu			1		
<i>Bycanistes sharpii duboisi</i> —Congo White-tailed Hornbill			1		
<i>Ramphastos swainsonii</i> —Swainson's Toucan.....			1		
<i>Euplectes f. franciscana</i> —Orange Weaver.....			1		

TABLE II. (Continued)

BIRDS.			Specimens.	Total specimens autopsied.	Percentage of 135 reptiles autopsied.
<i>Munia a. atricapilla</i> —Black-headed Mannikin.....	1				
<i>Notiopsar curaeus</i> —Chilean Blackbird.....	1				
<i>Paroaria nigrigenis</i> —Black-cheeked Cardinal.....	1				
<i>Rubigula dispar</i> —Sumatran Ruby-throated Bulbul.....	1				
<i>Spinus t. tristis</i> —American Gold Finch.....	1				
<i>Thraupis c. cana</i> —Southern Blue Tanager.....	1				
<i>Turdus o. olivaceus</i> —Olive Thrush.....	1				
Icterus		1			.45
<i>Aidemossyne m. modesta</i> —Cherry Finch.....	1				
DISEASES OF GENITO-URINARY SYSTEM				9	4.07
Nephritis				8	3.61
<i>Dissoura episcopus microscelis</i> —African White-necked Stork.....	1				
<i>Theristicus caudatus</i> —Guiana Ibis.....	1				
<i>Psittacula eupatria nipalensis</i> —Indian Ring Parrakeet.....	1				
<i>Nymphicus hollandicus</i> —Cockateel.....	1				
<i>Musophaga v. violacea</i> —Senegal Violet Touraco.....	1				
<i>Gymnoderus foetidus</i> —Bare-necked Cotinga.....	1				
<i>Kittocinclu m. malabarica</i> —Shama Thrush.....	2				
Egg Bound		1			.45
<i>Phasianus colchicus versicolor</i> —Versicolor Pheasant...	1				
DISEASES OF SKIN & CELLULAR TISSUE				4	1.80
Abscess				4	1.80
<i>Lophortyx c. californica</i> —California Quail.....	1				
<i>Pavo cristatus</i> var.—White Indian Peafowl.....	1				
<i>Kakatoe r. roseicapilla</i> —Roseate Cockatoo.....	1				
<i>Pitta sordida cucullata</i> —Green-breasted Pitta.....	1				
VIOLENT & ACCIDENTAL DEATHS				71	32.12
Trauma—Head				37	16.74
<i>Argusianus argus argus</i> —Great Argus Pheasant.....	1				
<i>Chrysolophus pictus</i> —Golden Pheasant.....	1				
<i>Gennaeus leucomelanos melanotus</i> —Melanotus Pheasant.....	1				
<i>Philortyx fasciatus</i> —Banded Quail.....	1				
<i>Anthropoides paradisea</i> —Paradise Crane.....	1				
<i>Larus atricilla</i> —North American Laughing Gull.....	1				
<i>Larus n. novae-hollandiae</i> —Silver Gull.....	1				
<i>Leptotila c. cassini</i> —Cassin Dove.....	1				
<i>Streptopelia d. decaocto</i> —Barbary Turtle Dove.....	1				
<i>Kakatoe g. galerita</i> —Greater Sulphur-crested Cockatoo.....	1				
<i>Kakatoe r. roseicapilla</i> —Roseate Cockatoo.....	1				
<i>Kakatoe sanguinea goffini</i> —Goffin's Cockatoo.....	1				
<i>Melopsittacus undulatus</i> —Grass Parrakeet.....	2				
<i>Pionites m. melanocephala</i> —Black-headed Caique.....	1				
<i>Trichoglossus haematod moluccanus</i> —Blue Mountain Lorikeet.....	1				
<i>Ramphastos discolorus</i> —Green-billed Toucan.....	1				
<i>Megalaima virens marshallorum</i> —Great Himalayan Barbet.....	1				
<i>Auripasser luteus</i> —Abyssinian Golden Sparrow.....	1				
<i>Tangara icterocephala</i> —Silver-throated Calliste.....	1				
<i>Chlorophonia f. frontalis</i> —Yellow-fronted Green Tanager.....	1				
<i>Corvus b. brachyrhynchos</i> —Eastern Crow.....	1				

TABLE II. (Continued)

BIRDS.			
	Specimens.	Total specimens autopsied.	Percentage of 135 reptiles autopsied.
<i>Cyanerpes cyaneus</i> —Yellow-winged Sugar Bird.....	2		
<i>Euplectes f. franciscana</i> —Orange Weaver.....	1		
<i>Euplectes o. orix</i> —Grenadier Weaver.....	1		
<i>Hemixus f. flavala</i> —White-throated Bulbul.....	1		
<i>Myadestes unicolor</i> —Blue Solitaire.....	1		
<i>Padda oryzivora</i> —Java Sparrow.....	1		
<i>Ramphocelus c. carbo</i> —Silver-beaked Tanager.....	1		
<i>Taeniopygia c. castanotis</i> —Zebra Finch.....	1		
<i>Tangara flava cayana</i> —Black-faced Calliste.....	2		
<i>Tangara g. guttata</i> —Larger Spotted Calliste.....	3		
<i>Tanagra xanthogaster exsul</i> —Venezuelan Rufous-capped Euphonia	1		
Fractured Cervical Vertebrae		1	.45
<i>Rhynchotus rufescens rufescens</i> —Rufous Tinamou.....	1		
Fractured Tibia & Fibula		1	.45
<i>Grus canadensis tabida</i> —Sandhill Crane.....	1		
Destroyed—Fractured Humerus		1	.45
<i>Pavo cristatus</i> —Peacock	1		
Destroyed—Blind		1	.45
<i>Dromiceius n. novaeollandiae</i> —Emu.....	1		
Drowning		1	.45
<i>Ploceus v. vitellinus</i> —Half-masked Weaver.....	1		
Poisoning—Botulism		29	13.12
<i>Aix sponsa</i> —Wood Duck.....	3		
<i>Anas platyrhynchos</i> —White Duck.....	1		
<i>Anas p. platyrhynchos</i> —Mallard Duck.....	19		
<i>Anas rubripes tristis</i> —Black Duck.....	1		
<i>Chen caerulescens</i> —Blue Goose.....	1		
<i>Cygnus olor</i> —Mute Swan.....	1		
<i>Dendrocygna a. autumnalis</i> —Black-breasted Tree Duck	2		
<i>Dendrocygna autumnalis discolor</i> —Gray-breasted Tree Duck	1		
DIAGNOSIS UNDETERMINED		51	23.07

TABLE III.

MAMMALS.					
	Immature.	Adult.	Post-adult.	Total specimens autopsied.	Percentage of 109 mammals autopsied.
INFECTIOUS & PARASITIC DISEASES.....	3	6	1	10	9.17
Tuberculosis		3	1	4	3.66
<i>Cebus capucina</i> —White-faced Sapajou		1			
<i>Cercocebus torquatus</i> — Red-headed Mangabey		1			
<i>Macaca irus</i> —Java Macaque			1		
<i>Macaca mulatta</i> —Rhesus Monkey		1			
Infectious Feline Enteritis	3			3	2.75
<i>Acinonyx jubatus</i> —Cheetah	1				
<i>Felis cougar</i> —Puma	1				
<i>Felis pardalis</i> —Ocelot	1				
Acanthocephaliasis		1		1	.91
<i>Solenodon paradoxus</i> —Solenodon		1			
Ascariidiasis		1		1	.91
<i>Didelphis virginiana</i> —Opossum		1			
Trichinosis		1		1	.91
<i>Taxidea taxus taxus</i> —American Badger*...		1			
CANCER AND OTHER TUMORS.....		2	1	3	2.75
Carcinoma Esophagus		1		1	.91
<i>Tragelaphus angasi</i> —Nyala		1			
Liver Cell Carcinoma		1		1	.91
<i>Odocoileus osceola</i> — Florida White-tailed Deer		1			
Osteogenic Sarcoma			1	1	.91
<i>Cervus axis</i> —Axis Deer			1		
NUTRITIONAL DISEASES	4	2		6	5.50
Malnutrition	4	2		6	5.50
<i>Cebus capucina</i> —White-faced Sapajou....	1				
<i>Cercopithecus mona cambelli</i> —Mona Monkey	1				
<i>Cercopithecus sabaeus</i> —Green Monkey....		1			
<i>Hapale pygmaea</i> —Pygmy Marmoset.....		1			
<i>Cervus canadensis canadensis</i> —Elk.....	1				
<i>Hemitragus jemlahicus</i> —Tahr	1				
DISEASES OF BLOOD & BLOOD PRODUCING ORGANS.		1		1	.91
Anemia		1		1	
<i>Nasua nasua</i> —White-nosed Coati.....		1			
DISEASES OF NERVOUS SYSTEM.....		8		8	7.33
Encephalitis		4		4	3.66
<i>Ateles cucullatus</i> —Spider Monkey.....		1			
<i>Macaca nemestrina</i> —Pigtail Monkey.....		1			
<i>Papio anubis</i> —Olive Baboon.....		2			
Destroyed—Facial Paralysis		1		1	.91
<i>Cebus capucina</i> —White-faced Sapajou....		1			
Destroyed—Posterior Paralysis				1	.91
<i>Sarcophilus harrissii</i> —Tasmanian Devil....		1			
Destroyed—Blindness		2		2	1.83
<i>Acinonyx jubatus</i> —Cheetah		2			
DISEASES OF CIRCULATORY SYSTEM.....		1	1	2	1.83
Vegetative Endocarditis		1	1	2	1.83
<i>Didelphis virginiana</i> —Opossum			1		
<i>Mephitis nigra</i> —Skunk		1			

TABLE III. (Continued)

MAMMALS.	Immature.	Adult.	Post-adult.	Total specimens autopsied.	Percentage of 109 mammals autopsied.
DISEASES OF RESPIRATORY SYSTEM.....	9	11	1	21	18.34
Suppurative Sinusitis		1		1	.91
<i>Lutra canadensis vaga</i> —Florida Otter.....		1			
Pulmonary Congestion & Edema.....	8	2	1	11	10.09
<i>Macaca irus</i> —Java Macaque.....	1				
<i>Macaca mulatta</i> —Rhesus Monkey.....	1				
<i>Erithizon d. dorsatum</i> —Canadian Porcupine.....		1			
<i>Lutra canadensis vaga</i> —Florida Otter.....	2	1			
<i>Choeropsis liberiensis</i> — Pygmy Hippopotamus	1				
<i>Cervus eldi</i> —Eld's Deer.....	1				
<i>Ammotragus lervia</i> —Aoudad	2				
<i>Saiga tatarica</i> —Saiga Antelope.....			1		
Bronchopneumonia	1	7		8	7.33
<i>Callithrix penicillata</i> —Marmoset		1			
<i>Ateles cucullatus</i> —Spider Monkey.....	1				
<i>Lagothrix humboldtii</i> —Woolly Monkey....		1			
<i>Cercopithecus mona cambelli</i> —Mona Monkey.....		1			
<i>Zalophus californianus</i> —Sea Lion.....		1			
<i>Euphractus sexcinctus</i> —Six-banded Armadillo		1			
<i>Procavia capensis</i> —Hyrax		1			
<i>Dama dama</i> —Fallow Deer.....		1			
Gangrenous Pneumonia		1		1	.91
<i>Arctocephalus australis</i> — South American Fur Seal		1			
DISEASES OF DIGESTIVE SYSTEM.....	3	12	2	17	15.59
Choke		1		1	.91
<i>Suricata suricatta</i> —Meerkat		1			
Gastro-enteritis	2	8		10	9.17
<i>Lagothrix infumatus</i> —Woolly Monkey....		3			
<i>Papio anubis</i> —Olive Baboon.....		1			
<i>Didelphis virginiana</i> —Opossum	1				
<i>Phastolomis mitchelli</i> —Wombat		1			
<i>Macropus g. giganteus</i> —Great Gray Kangaroo		1			
<i>Ursus a. arctos</i> —European Brown Bear....		1			
<i>Cervus unicolor</i> —Indian Sambar Deer.....		1			
<i>Cervus hortulorum</i> —Dybowski Deer	1				
Volvulus of Intestines.....		1		1	.91
<i>Odocoileus osceola</i> — Florida White-tailed Deer		1			
Impaction of Colon with Ulceration.....	1			1	.91
<i>Didelphis virginiana</i> —Opossum	1				
Actinobacillosis—Oral Tissues.....		2		2	1.83
<i>Sylvicapra grimmii</i> —Gray Duiker.....		2			
Enteritis—Squill Poisoning			1	1	.91
<i>Koiiopotamus koiropotamus kenlae</i> — Gray Bush Pig			1		
Icterus		1		1	.91
<i>Lutra canadensis vaga</i> —Florida Otter.....			1		
DISEASE OF BONES & ORGANS OF LOCOMOTION...	2			3	2.75
Paget's Disease			1	1	.91
<i>Papio anubis</i> —Olive Baboon.....	1				

TABLE III. (Continued)

MAMMALS.	Immature.	Adult.	Post-adult.	Total specimens autopsied.	Percentage of 109 mammals autopsied.
Muscular Distrophy		2		2	1.83
<i>Dendrolagus ursinus</i> —Tree Kangaroo.....		2			
CONGENITAL MALFORMATION	1			1	.91
Congenital Anomaly—Legs	1			1	.91
<i>Cervus axis</i> —Axis Deer	1				
DISEASES OF NEW BORN	1			1	.91
Internal Hemorrhage—Umbilical Artery	1			1	.91
<i>Lama vicugna</i> —Vicugna	1				
SENILITY			5	5	4.58
Destroyed—Senility			5	5	4.58
<i>Didelphis virginiana</i> —Opossum			1		
<i>Camelus dromedarius</i> —Dromedary			2		
<i>Cervus duvauceli</i> —Barasingha Deer			1		
<i>Cervus canadensis canadensis</i> —Elk.....			1		
VIOLENT AND ACCIDENTAL DEATHS	8	10	1	19	17.43
Destroyed—Trauma	8	10	1	19	17.43
<i>Cebus capucina</i> —White-faced Sapajou.....	1	1			
<i>Erythrocebus patas</i> —Patas Monkey.....	1				
<i>Macaca irus</i> —Java Macaque.....	1				
<i>Didelphis virginiana</i> —Opossum			1		
<i>Potos flavus</i> —Kinkajou		1			
<i>Canis latrans</i> —Coyote		1			
<i>Felis cacomitli</i> —Jaguarundi Cat.....		1			
<i>Felis leo</i> —Lion	1				
<i>Paradoxurus hemaphroditus</i> —Yellow Para-	3				
<i>doxure</i>					
<i>Dasypus novemcinctus texanus</i> — Nine-		1			
banded Armadillo		2			
<i>Dama dama</i> —Fallow Deer.....					
<i>Odocoileus osceola</i> — Florida White-tailed		2			
Deer	1	1			
<i>Amnotragus lervia</i> —Aoudad					
DIAGNOSIS UNDETERMINED	5	7		12	11.00

* Reported in *Jour. of Parasit.*, April, 1940, Vol. 26, No. 2, page 157.

TABLE IV.
Summary of Mortality Percentage in Specimens Autopsied,
by Disease Groups.

Disease Group	% of 135 Reptiles	% of 221 Birds	% of 109 Mammals
Gastro-intestinal	46.66	14.02	15.59
Respiratory	25.18	10.40	18.34
Nutritional	2.96	.90	5.50
Infectious and Parasitic.....	7.40	10.85	9.17
Trauma	16.74	17.43
All Other Causes.....	17.80	47.09	33.97

TABLE V.
Summary of Mortality for All Specimens in the Collection
During 1939.

	Reptiles	Birds	Mammals
Specimens in Collection During 1939 ¹ ...	1,246	2,105	621
Deaths from All Causes ²	800	415	120
% of Mortality in Collection ³	64.20	19.71	19.32

¹ These figures represent the number of specimens that came into, or remained in, the Park during 1939, and are the totals of specimens in the collection in the course of the year. Some died before being placed on exhibition.
² Includes all deaths irrespective of cause or time after arrival.
³ Based on total specimens and total deaths.